

Amendments to the Specification

Please replace the paragraph at page 7, lines 3 through 25 with the following amended paragraph:

Duct 12 is commonly rectangular in cross section, but can also have any other suitable cross section such as polygonal, circular, or have a combination of curves and straight sides. A pump or blower can be used to inject the reaction agent 21 into duct 12 through port 20. Although gas conversion system 10 has been shown to have one port 20 for introducing the reaction agent into duct 12, alternatively, more than one port 20 can be employed. Additionally, a series of ports 20 can be positioned about duct 12 for introducing reaction agent 21 radially inwardly into duct 12. Electron beam emitter 14 is typically similar to those disclosed in U.S. Patent Application Serial No. 09/349,592, filed July 9, 1999 entitled "Electron Beam Accelerator," the entire contents of which are incorporated herein, which describes that the electrons of the electron beam exit the filament housing in a relatively straight manner. Alternatively, other suitable electron beam emitters can be used. Filter 16 typically includes an electrostatic precipitator which increases the size of the particles of the solids and a mechanical filter downstream of the precipitator. Alternatively, filter 16 can consist of either the electrostatic precipitator or the mechanical filter. Collector 18 is often a collection container or bin for collecting solids under duct 12. Collector 18 can also include a conduit or chute for conveying the solids to a bin positioned apart from the duct 12. Gas conversion system 10 is often within or part of an air circulation system, including air conditioning and heating systems, but can also be a stand alone unit employed primarily for removing carbon dioxide from air and releasing oxygen. In such a case, an air circulator such as a fan or blower would be included for causing the air flow within duct 12. In embodiments where gas conversion system 10 is employed for treating exhaust gases, the gases are often the product of a combustion reaction and in many cases are able to flow through duct 12 without the aid of an air circulator.